



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)  
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY  
PRODUCT CONTROL SECTION  
11805 SW 26 Street, Room 208  
Miami, Florida 33175-2474  
T (786) 315-2590 F (786) 315-2599

## NOTICE OF ACCEPTANCE (NOA)

[www.miamidade.gov/economy](http://www.miamidade.gov/economy)

**Mule-Hide Products Co., Inc.**  
**1195 Prince Hall Dr.**  
**Beloit, WI 53511**

### SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

### DESCRIPTION: Mule-Hide Self-Adhered Roof System over Steel Decks

**LABELING:** Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

**RENEWAL** of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

**TERMINATION** of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

**ADVERTISEMENT:** The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

**INSPECTION:** A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This renews NOA# 08-0924.17 and consists of pages 1 through 10.  
The submitted documentation was reviewed by Alex Tigera.



NOA No.: 12-0815.12  
Expiration Date: 10/11/13  
Approval Date: 10/11/12  
Page 1 of 10

## ROOFING ASSEMBLY APPROVAL

<b>Category:</b>	Roofing
<b>Sub-Category:</b>	Modified Bitumen
<b>Materials</b>	SBS/APP
<b>Deck Type:</b>	Steel
<b>Maximum Design Pressure</b>	-90 psf

### TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<b><u>Product</u></b>	<b><u>Dimensions</u></b>	<b><u>Test Specification</u></b>	<b><u>Product Description</u></b>
Nail Base	65' 2" x 3' 3-3/8"	ASTM D 6163, Type I	SBS modified asphalt coated fiberglass reinforced base sheet.
Nail Base P	5' 2" x 3' 3-3/8"	ASTM D 6164, Type I	SBS modified asphalt coated polyester reinforced base sheet.
SA Base Sheet (FR) (1.5-mm)	32' 6" x 3' 3-3/8"	ASTM D 6163, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a smooth top surface.
SA Base Sheet 6163 (FR)	32' 6" x 3' 3-3/8"	ASTM D 6163, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a smooth top surface.
SA Base Sheet (1.5-mm)	32' 6" x 3' 3-3/8"	ASTM D 6163, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a smooth top surface.
SA Base Sheet 6163	32' 6" x 3' 3-3/8"	ASTM D 6163, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a smooth top surface.
SA-SBS Cap Sheet (FR)	32' 6" x 3' 3-3/8"	ASTM D 6164, Type I	Self-adhered, polyester reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-SBS Cap Sheet	32' 6" x 3' 3-3/8"	ASTM D 6164, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-APP Cap Sheet	32' 6" x 3' 3-3/8"	ASTM D 6222, Type I	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-APP Cap Sheet (FR)	32' 6" x 3' 3-3/8"	ASTM D 6222, Type I	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-SBS KoolCap®	32' 6" x 3' 3-3/8"	ASTM D 6164, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.

SA-SBS KoolCap® (FR)	32' 6" x 3' 3-3/8"	ASTM D 6164, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-APP KoolCap™	32' 6" x 3' 3-3/8"	ASTM D 6222, Type I	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-APP KoolCap™ (FR)	32' 6" x 3' 3-3/8"	ASTM D 6222, Type I	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a granule top surface
SA-APP PF30 KoolCap®	32' 10" x 3' 3-3/8"	ASTM D6222 Type I	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a white film laminate on the top surface.

## APPROVED INSULATIONS:

**TABLE 2**

<u>Product Name</u>	<u>Product Description</u>	<u>Manufacturer (With Current NOA)</u>
Polytherm-H	Polyisocyanurate foam insulation	Polyglass USA, Inc.
Polytherm	Polyisocyanurate foam insulation	Polyglass USA, Inc.
Polytherm Composite	Polyisocyanurate/perlite composite insulation.	Polyglass USA, Inc.
Poly ISO 2	Polyisocyanurate foam insulation	Mule-Hide Products Co., Inc.
Poly ISO 1	Polyisocyanurate foam insulation	Mule-Hide Products Co., Inc.
ACFoam II	Polyisocyanurate foam insulation	Atlas Energy Products
ACFoam III	Polyisocyanurate foam insulation	Atlas Energy Products
High Density Wood Fiberboard	Wood fiber insulation board	Generic
DensDeck, DensDeck Prime	Gypsum insulation board	Georgia-Pacific
H-Shield	Polyisocyanurate foam insulation	Hunter Panels, LLC
H-Shield CG	Polyisocyanurate/perlite composite insulation	Hunter Panels, LLC
ENRGY-3, JM ISO 3	Polyisocyanurate foam insulation	Johns Manville Corp.
Fesco Board	Expanded mineral fiber	Johns Manville Corp.
Multi-Max FA-3	Polyisocyanurate foam insulation	RMax, Inc.
Thermarook Composite	Polyisocyanurate/perlite composite insulation.	RMax, Inc.
SECUROCK Gypsum-fiber Roof Board	Fiber reinforced coverboard	USG Corp.



**APPROVED FASTENERS:****TABLE 3**

<b><u>Fastener Number</u></b>	<b><u>Product Name</u></b>	<b><u>Product Description</u></b>	<b><u>Dimensions</u></b>	<b><u>Manufacturer (With Current NOA)</u></b>
1.	Polygrip Fasteners #12, #14 & #15	Insulation fastener for wood, steel and concrete decks	Various	Polyglass USA, Inc.
2.	Polygrip Hex Plate	Galvalume hex stress plate.	2 7/8" x 3-1/4"	Polyglass USA, Inc.
3.	Dekfast Fasteners #12, #14 & #15	Insulation fastener for wood, steel and concrete decks	Various	SFS Intec, Inc.
4.	Dekfast Galvalume Steel Hex Plate	Galvalume hex stress plate.	2 7/8" x 3 1/4"	SFS Intec, Inc.
5.	Dekfast Galvalume Steel 3 in. Round	3" round galvalume AZ50 steel plate.	3" round	SFS Intec, Inc.
6.	Tru-Fast HD (#14) Fasteners	Insulation fastener for wood, steel and concrete decks	Various	The Tru-Fast Corp.
7.	Tru-Fast Plates	3" round galvalume AZ55 steel plate	3" round	The Tru-Fast Corp.
8.	Tru-Fast EHD (#15)	Carbon steel fastener for use in concrete, steel and wood decks	Various	The Tru-Fast Corp.
9.	Tru-Fast 3" Metal Insulation Plate	Round Galvalume AZ50 steel plate	3.23 round	The Tru-Fast Corp.
10.	Mule-Hide HDP Fastener	Insulation fastener for steel and wood decks	Various	Mule-Hide Products Co., Inc.
11.	Mule-Hide EHD Fastener	Carbon steel fastener for use in concrete, steel and wood decks	Various	Mule-Hide Products Co., Inc.
12.	Mule-Hide 3" Insulation Plate	3.23" diameter round galvalume AZ50 steel plate	3.23 round 3" round	Mule-Hide Products Co., Inc.

**APPROVED SURFACING:****TABLE 4**

	<b><u>Product Name</u></b>	<b><u>Product Description</u></b>	<b><u>Application Rate</u></b>	<b><u>Specification</u></b>	<b><u>Manufacturer</u></b>
Gravel		To be installed in a flood coat of approved asphalt at 60 lbs/sq	400 lbs/sq	N/A	Generic
Slag		To be installed in a flood coat of approved asphalt at 60 lbs/sq	300 lbs/sq	N/A	Generic

**EVIDENCE SUBMITTED:**

<u>Test Agency</u>	<u>Test Name/Report</u>	<u>Report No.</u>	<u>Date</u>
Factory Mutual Research Corporation	4470	J.I. 2W7A7.AM	08.04.94
	4470	J.I. 3001334	02.15.00
	4470	J.I. 3000857	01.12.00
	4470	J.I. 3004091	01.12.00
Underwriters Laboratory	TAS 114	00NK20869	06.08.00
Trinity   ERD	TAS 114	11752.09.99-1	02.08.00
	TAS 114	11776.06.02	06.13.02
	TAS 114	11776.06.02	08.11.03
	TAS 114	02843.02.05-1	02.10.05
	TAS 117(B)-ASTM D903	020841.06.04	06.02.04
	TAS 114	11757.12.00-1	12.01.00
	TAS 114	11757.04.01-1	04.27.01
	TAS 117(B)-ASTM D6862	C8500SC.11.07	11.30.07
	ASTM D6164 / ASTM D6222	P10490.08.08	08.13.08
	ASTM D6164 / ASTM D6222	P10490.10.08-R1	10.03.08
	ASTM D6222	P7400.03.08-R2	10/09/08
	TAS 114(D) – ASTM D1876	P10070.10.08	10/09/08
	ASTM D6222	P10490.10.08-2	10/30/08
	FM 4470 & TAS 114	P33970.03.11	03/15/11
	ASTM D6163 / ASTM D 4601	P33960.03.11	03/15/11
PRI Asphalt Technologies	ASTM D6222	PUSA-061-02-02	01/28/08
	ASTM D6222	PUSA-062-02-02	12/04/08
	ASTM D6163	PUSA-064-02-02	02/27/08

## APPROVED ASSEMBLIES:

<b>Membrane Type:</b>	SBS/APP
<b>Deck Type 2I:</b>	Steel, Insulated
<b>Deck Description:</b>	18-22 ga. Type B, Grade C steel deck
<b>System Type B(1):</b>	Base layer of insulation mechanically fastened, top layer adhered with approved asphalt. Membrane is subsequently adhered to insulation.

All General and System limitations apply.

One or more layers of any of the following insulations:

<b><u>Base Insulation Layer</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ENRGY-3, Poly ISO 2, Polytherm, H-Shield, Polytherm-H, Poly ISO 1 Minimum 1.5" thick	1, 3, 6 or 10	1:1.33 ft <sup>2</sup>

**Note:** Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

<b><u>Top Insulation Layer</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
Approved High Density Wood Fiberboard Minimum ½" thick	N/A	N/A
Fesco Board Minimum ¾" thick	N/A	N/A

**Note:** Apply top layer of insulation in a full mopping of any approved mopping asphalt within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as Base Layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

<b>Base Sheet:</b>	One or more plies of Nail Base, or an ASTM D4601, Type II approved base sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
<b>Primer:</b>	ASTM D41 primer.
<b>Ply Sheet:</b>	One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.
<b>Membrane:</b>	One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap™, SA-APP KoolCap™ (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.



**Surfacing:** (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.

**Maximum Design Pressure:** -90 psf, (See General Limitation #7.)



**Membrane Type:** SBS/APP  
**Deck Type 2I:** Steel, Insulated  
**Deck Description:** 18-22 ga. Type B, Grade C steel deck  
**System Type C(1):** All layers of insulation are mechanically attached to roof deck. Membrane is subsequently adhered to insulation.

**All General and System Limitations apply.**

One or more layers of any of the following insulations:

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft<sup>2</sup></u>
ENRGY-3, Polytherm, Poly ISO 2, H-Shield, Polytherm-H, Poly ISO 1 Minimum 1.5" thick	1, 3, 6 or 10	1:1.33 ft <sup>2</sup>

**Note:** All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

**Base Sheet:** One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.

**Membrane:** One ply of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap™, SA-APP KoolCap™ (FR), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), SA-APP Cap Sheet, SA-APP PF30 KoolCap® or SA-APP Cap Sheet (FR) self adhered.

**Surfacing:** (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.

**Maximum Design Pressure:** -82.5 psf; (See general limitation #7.)





**Membrane Type:** SBS/APP  
**Deck Type 2I:** Steel, Insulated  
**Deck Description:** 18-22 ga. Type B, Grade C steel deck  
**System Type D(1):** All insulation is loosed laid with preliminary attachment to deck. Base sheet is subsequently mechanically fastened through insulation to the roof deck.

**All General and System limitations apply.**

One or more layers of any of the following insulations:

<b><u>Base Insulation Layer</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>Any approved Polyisocyanurate listed in Table 2 Minimum 1" thick</b>	N/A	N/A
<b><u>Top Insulation Layer (Optional)</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>Fesco Board Minimum ¾" thick</b>	N/A	N/A
<b>Approved High Density Wood Fiber Minimum ½" thick</b>	N/A	N/A
<b>DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick</b>	N/A	N/A

**Note:** All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

**Base Sheet:** One ply of Nail Base or Nail Base P fastened to the deck as described below:

**Fastening:** Attach base sheet using Dekfast #14 or #15 Fasteners with Galvalume Steel Hex Plates, Polygrip Fasteners (#14 or #15) with Polygrip Hex Plates or Tru-Fast HD (#14) Fastener or EHD (#15) Fasteners with 3" Metal Insulation Plates 12" o.c. in a 4" lap and 12" o.c. in two equally spaced staggered rows in the center of the sheet.

**Ply Sheet:** One or more plies of SA Base Sheet, SA Base Sheet 6163, SA Base Sheet (FR), or SA Base Sheet 6163 (FR) self-adhered.

**Membrane:** One or more plies of SA-SBS KoolCap®, SA-SBS KoolCap® (FR), SA-APP KoolCap™, SA-APP KoolCap™ (FR), SA-APP Cap Sheet (FR), SA-APP Cap Sheet, SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR) or SA-APP PF30 KoolCap® self-adhered.

**Surfacing:** (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.

**Maximum Design Pressure:** -52.5 psf; (See General limitation #7.)



## STEEL DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117; calculations shall be signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant.
2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8" puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.

## GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance; refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each side lap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq.

**Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**

5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform to Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**

**END OF THIS ACCEPTANCE**